Construction History

PDES, Inc.

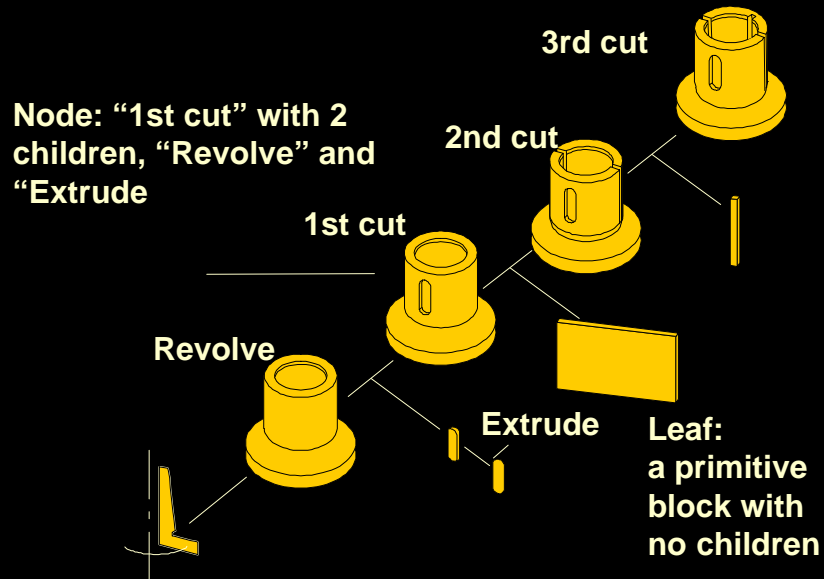**USAGE SCENARIOS**

- **When a model parameter changes the construction history can be replayed to update the design geometry**

- **Use construction history to analyze/modify order of design operations**

Node: "1st cut" with 2 children, "Revolve" and "Extrude

1st cut

2nd cut

3rd cut

Revolve

Extrude

Leaf: a primitive block with no children

MILESTONES

Q2 00 STEPnet testing completed

Q3 00 Submit to ISO as Tech Spec

TECHNICAL LEAD

Bill Anderson

Solid Model Construction History Accomplishments Since the Last Offsite

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- **Obtained broader set of user requirements from PDES, Inc. member companies**
  - Constructive Solid Geometry (CSG) history for long term retention
  - Exchanges between CATIA, UG, Pro/E, ICAD, IDEAS
  - Modify design data in receiving system
  - Model transfer that supports reconstruction with correct dependencies among features
- **Identified two separate modules**
  - Exchange only Construction History (no geometric constraints)
  - Exchange both Construction History and Geometric Constraints
    - Construction History module would use Geometric Constraints Module

- **Scope to include Constructive Solid Geometry plus**
  - Operands can be Advanced Brep solids or Faceted Brep solid models with operators (union, difference, intersection)
  - Capture the procedural operations plus the evaluated Brep as part of the history
  - Additional primitives included from Part 42 version 2 DIS
- **Presentation to ISO Parametrics Group as short term proof-of-concept**

Solid Model Construction History Plans for Next Quarter

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- Complete ARM diagrams and model interpretation

- Develop usage guide

- Complete necessary module documentation

Solid Model Construction History Challenges

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- **Testing of Construction History in near term**
  - Work closely with ProSTEP to increase joint priority
- **Work with ISO Parametrics Group in development of longer term history-based (procedural) approach**
  - Seek additional funding support